

From the INTERNATIONAL SEARCHING AUTHORITY

PCT

To:

BROMBERG & SUNSTEIN LLP
Attn. Sandvos, Jay
125 Summer Street
Boston, Massachusetts 02110-1618
UNITED STATES OF AMERICA

Docketed

NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL SEARCH REPORT AND
THE WRITTEN OPINION OF THE INTERNATIONAL
SEARCHING AUTHORITY, OR THE DECLARATION

(PCT Rule 44.1)

Applicant's or agent's file reference

2550/183 WO

Date of mailing
(day/month/year)

05/04/2005

FOR FURTHER ACTION

See paragraphs 1 and 4 below

International application No.

PCT/US2004/025093

International filing date
(day/month/year)

04/08/2004

Applicant

ANALOG DEVICES, INC.

1. ☒ The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.

Filing of amendments and statement under Article 19:

The applicant is entitled, if he so wishes, to amend the claims of the International Application (see Rule 46):

When? The time limit for filing such amendments is normally 2 months from the date of transmittal of the International Search Report; however, for more details, see the notes on the accompanying sheet.

Where? Directly to the International Bureau of WIPO, 34 chemin des Colombettes
1211 Geneva 20, Switzerland, Facsimile No.: (41-22) 740.14.35

For more detailed instructions, see the notes on the accompanying sheet.

2. ☐ The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.

3. ☐ **With regard to the protest** against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:

- ☐ the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.
☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. Reminders

Shortly after the expiration of **18 months** from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in Rules 90bis.1 and 90bis.3, respectively, before the completion of the technical preparations for international publication.

The applicant may submit comments on an informal basis on the written opinion of the International Searching Authority to the International Bureau. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established. These comments would also be made available to the public but not before the expiration of 30 months from the priority date.

Within **19 months** from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase until **30 months** from the priority date (in some Offices even later); otherwise, the applicant must, **within 20 months** from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices.

In respect of other designated Offices, the time limit of **30 months** (or later) will apply even if no demand is filed within 19 months.

See the Annex to Form PCT/IB/301 and, for details about the applicable time limits, Office by Office, see the *PCT Applicant's Guide*, Volume II, National Chapters and the WIPO Internet site.

Name and mailing address of the International Searching Authority



European Patent Office, P.B. 5818 Patentlaan 2
NL-2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Mareike Zambuto

NOTES TO FORM PCT/ISA/220

These Notes are intended to give the basic instructions concerning the filing of amendments under article 19. The Notes are based on the requirements of the Patent Cooperation Treaty, the Regulations and the Administrative Instructions under that Treaty. In case of discrepancy between these Notes and those requirements, the latter are applicable. For more detailed information, see also the PCT Applicant's Guide, a publication of WIPO.

In these Notes, "Article", "Rule", and "Section" refer to the provisions of the PCT, the PCT Regulations and the PCT Administrative Instructions respectively.

INSTRUCTIONS CONCERNING AMENDMENTS UNDER ARTICLE 19

The applicant has, after having received the international search report, one opportunity to amend the claims of the international application. It should however be emphasized that, since all parts of the international application (claims, description and drawings) may be amended during the international preliminary examination procedure, there is usually no need to file amendments of the claims under Article 19 except where, e.g. the applicant wants the latter to be published for the purposes of provisional protection or has another reason for amending the claims before international publication. Furthermore, it should be emphasized that provisional protection is available in some States only.

What parts of the international application may be amended?

Under Article 19, only the claims may be amended.

During the international phase, the claims may also be amended (or further amended) under Article 34 before the International Preliminary Examining Authority. The description and drawings may only be amended under Article 34 before the International Examining Authority.

Upon entry into the national phase, all parts of the international application may be amended under Article 28 or, where applicable, Article 41.

When?

Within 2 months from the date of transmittal of the international search report or 16 months from the priority date, whichever time limit expires later. It should be noted, however, that the amendments will be considered as having been received on time if they are received by the International Bureau after the expiration of the applicable time limit but before the completion of the technical preparations for international publication (Rule 46.1).

Where not to file the amendments?

The amendments may only be filed with the International Bureau and not with the receiving Office or the International Searching Authority (Rule 46.2).

Where a demand for international preliminary examination has been/is filed, see below.

How?

Either by cancelling one or more entire claims, by adding one or more new claims or by amending the text of one or more of the claims as filed.

A replacement sheet must be submitted for each sheet of the claims which, on account of an amendment or amendments, differs from the sheet originally filed.

All the claims appearing on a replacement sheet must be numbered in Arabic numerals. Where a claim is cancelled, no renumbering of the other claims is required. In all cases where claims are renumbered, they must be renumbered consecutively (Administrative Instructions, Section 205(b)).

The amendments must be made in the language in which the international application is to be published.

What documents must/may accompany the amendments?

Letter (Section 205(b)):

The amendments must be submitted with a letter.

The letter will not be published with the international application and the amended claims. It should not be confused with the "Statement under Article 19(1)" (see below, under "Statement under Article 19(1)").

The letter must be in English or French, at the choice of the applicant. However, if the language of the international application is English, the letter must be in English; if the language of the international application is French, the letter must be in French.

NOTES TO FORM PCT/ISA/220 (continued)

The letter must indicate the differences between the claims as filed and the claims as amended. It must, in particular, indicate, in connection with each claim appearing in the international application (it being understood that identical indications concerning several claims may be grouped), whether

- (i) the claim is unchanged;
- (ii) the claim is cancelled;
- (iii) the claim is new;
- (iv) the claim replaces one or more claims as filed;
- (v) the claim is the result of the division of a claim as filed.

The following examples illustrate the manner in which amendments must be explained in the accompanying letter:

1. [Where originally there were 48 claims and after amendment of some claims there are 51]:
"Claims 1 to 29, 31, 32, 34, 35, 37 to 48 replaced by amended claims bearing the same numbers; claims 30, 33 and 36 unchanged; new claims 49 to 51 added."
2. [Where originally there were 15 claims and after amendment of all claims there are 11]:
"Claims 1 to 15 replaced by amended claims 1 to 11."
3. [Where originally there were 14 claims and the amendments consist in cancelling some claims and in adding new claims]:
"Claims 1 to 6 and 14 unchanged; claims 7 to 13 cancelled; new claims 15, 16 and 17 added." or
"Claims 7 to 13 cancelled; new claims 15, 16 and 17 added; all other claims unchanged."
4. [Where various kinds of amendments are made]:
"Claims 1-10 unchanged; claims 11 to 13, 18 and 19 cancelled; claims 14, 15 and 16 replaced by amended claim 14; claim 17 subdivided into amended claims 15, 16 and 17; new claims 20 and 21 added."

"Statement under article 19(1)" (Rule 46.4)

The amendments may be accompanied by a statement explaining the amendments and indicating any impact that such amendments might have on the description and the drawings (which cannot be amended under Article 19(1)).

The statement will be published with the international application and the amended claims.

It must be in the language in which the international application is to be published.

It must be brief, not exceeding 500 words if in English or if translated into English.

It should not be confused with and does not replace the letter indicating the differences between the claims as filed and as amended. It must be filed on a separate sheet and must be identified as such by a heading, preferably by using the words "Statement under Article 19(1)."

It may not contain any disparaging comments on the international search report or the relevance of citations contained in that report. Reference to citations, relevant to a given claim, contained in the international search report may be made only in connection with an amendment of that claim.

Consequence if a demand for international preliminary examination has already been filed

If, at the time of filing any amendments under Article 19, a demand for international preliminary examination has already been submitted, the applicant must preferably, at the same time of filing the amendments with the International Bureau, also file a copy of such amendments with the International Preliminary Examining Authority (see Rule 62.2(a), first sentence).

Consequence with regard to translation of the international application for entry into the national phase

The applicant's attention is drawn to the fact that, where upon entry into the national phase, a translation of the claims as amended under Article 19 may have to be furnished to the designated/elected Offices, instead of, or in addition to, the translation of the claims as filed.

For further details on the requirements of each designated/elected Office, see Volume II of the PCT Applicant's Guide.

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 2550/183 WO	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/US2004/025093	International filing date (day/month/year) 04/08/2004	(Earliest) Priority Date (day/month/year) 04/08/2003
Applicant ANALOG DEVICES, INC.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (See Box II).

3. ☐ **Unity of invention is lacking** (see Box III).

4. With regard to the **title**,

- ☒ the text is approved as submitted by the applicant.
- ☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

- ☒ the text is approved as submitted by the applicant.
- ☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the **drawings**,

- a. the figure of the **drawings** to be published with the abstract is Figure No. 2
- ☒ as suggested by the applicant.
- ☐ as selected by this Authority, because the applicant failed to suggest a figure.
- ☐ as selected by this Authority, because this figure better characterizes the invention.
- b. ☐ none of the figures is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US2004/025093

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 H03G3/30

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H03G H03F H04B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, INSPEC

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 99/29047 A (QUALCOMM INC) 10 June 1999 (1999-06-10) page 7, line 20 - line 30 page 11, line 14 - line 35; figures 2,15 -----	1,7
X	EP 0 928 072 A (NOKIA MOBILE PHONES LTD) 7 July 1999 (1999-07-07) paragraph '0006! - paragraph '0007! paragraph '0033!; figure 2 -----	1-12
A	US 6 381 286 B1 (KENINGTON PETER B ET AL) 30 April 2002 (2002-04-30) column 5, line 28 - column 7, line 17; figures 2,2A -----	1,7
A	US 5 485 486 A (GILHOUSEN KLEIN S ET AL) 16 January 1996 (1996-01-16) column 16, line 45 - column 17, line 26; figure 5 -----	1,7



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

* Special categories of cited documents:

A document defining the general state of the art which is not considered to be of particular relevance

E earlier document but published on or after the international filing date

L document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

O document referring to an oral disclosure, use, exhibition or other means

P document published prior to the international filing date but later than the priority date claimed

T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

& document member of the same patent family

Date of the actual completion of the international search

21 January 2005

Date of mailing of the international search report

05/04/2005

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Blaas, D-L

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US2004/025093

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 9929047	A	10-06-1999	US 5722061 A	24-02-1998
			WO 9929047 A1	10-06-1999
			AT 264028 T	15-04-2004
			AU 742121 B2	20-12-2001
			AU 4735697 A	16-06-1999
			BR 9712974 A	02-01-2002
			CA 2275115 A1	10-06-1999
			DE 69728573 D1	13-05-2004
			DK 1020041 T3	02-08-2004
			EP 1020041 A1	19-07-2000
			FI 990710 A	30-03-1999
			IL 129261 A	17-09-2003
			JP 2001505026 T	10-04-2001
			NO 991578 A	28-05-1999
			KR 2000049037 A	25-07-2000
			RU 2211532 C2	27-08-2003
EP 0928072	A	07-07-1999	US 6125266 A	26-09-2000
			EP 0928072 A2	07-07-1999
			JP 11261437 A	24-09-1999
US 6381286	B1	30-04-2002	GB 2301247 A	27-11-1996
			AT 196704 T	15-10-2000
			AU 5774096 A	11-12-1996
			CA 2221685 A1	28-11-1996
			DE 69610498 D1	02-11-2000
			DE 69610498 T2	28-06-2001
			DK 827642 T3	22-01-2001
			EP 1033808 A2	06-09-2000
			EP 0827642 A1	11-03-1998
			ES 2150669 T3	01-12-2000
			WO 9637949 A1	28-11-1996
			GR 3034840 T3	28-02-2001
			JP 11505977 T	25-05-1999
US 5485486	A	16-01-1996	US 5265119 A	23-11-1993
			US 5056109 A	08-10-1991
			AU 653039 B2	15-09-1994
			AU 2009192 A	30-12-1992
			CA 2102114 A1	18-11-1992
			EP 1094644 A2	25-04-2001
			EP 0584241 A1	02-03-1994
			FI 935105 A	17-11-1993
			HU 66044 A2	28-09-1994
			JP 3014757 B2	28-02-2000
			JP 7500460 T	12-01-1995
			NO 934005 A	05-11-1993
			NO 20003769 A	05-11-1993
			NO 20010714 A	05-11-1993
			RU 2127951 C1	20-03-1999
			SG 48018 A1	17-04-1998
			WO 9221196 A1	26-11-1992
			AT 163822 T	15-03-1998
			AU 646001 B2	03-02-1994
			AU 6728390 A	31-05-1991
			BR 9007826 A	25-08-1992
			CA 2072989 A1	08-05-1991
			CN 1053870 A ,B	14-08-1991

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US2004/025093

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5485486 A		CN 1090107 A ,B	27-07-1994
		CN 1159720 A ,B	17-09-1997
		DE 69032105 D1	09-04-1998
		DE 69032105 T2	08-10-1998
		DK 500689 T3	21-12-1998
		EP 0500689 A1	02-09-1992
		ES 2113862 T3	16-05-1998
		FI 922083 A	07-05-1992
		GR 3026454 T3	30-06-1998
		HK 1010077 A1	11-06-1999
		IL 96218 A	27-02-1994
		JP 2776632 B2	16-07-1998
		JP 4502841 T	21-05-1992
		KR 215947 B1	16-08-1999
		MX 172367 B	14-12-1993
		NO 921792 A	06-07-1992
		SG 48360 A1	17-04-1998
		WO 9107037 A1	16-05-1991
		US 5257283 A	26-10-1993
		US 5267262 A	30-11-1993
		ZA 9008859 A	25-09-1991

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

To:

see form PCT/ISA/220

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing

(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION

See paragraph 2 below

International application No.
PCT/US2004/025093

International filing date (day/month/year)
04.08.2004

Priority date (day/month/year)
04.08.2003

International Patent Classification (IPC) or both national classification and IPC
H03G3/30

Applicant
ANALOG DEVICES, INC.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1 (a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



European Patent Office - P.B. 5818 Patentlaan 2
NL-2280 HV Rijswijk - Pays Bas
Tel. +31 70 340 - 2040 Tx: 31 651 epo nl
Fax: +31 70 340 - 3016

Authorized Officer

Blaas, D-L

Telephone No. +31 70 340-3244



**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/US2004/025093

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material:
☒ in written format
☐ in computer readable form
 - c. time of filing/furnishing:
☒ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/US2004/025093

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	2-6, 8-12
	No: Claims	1, 7
Inventive step (IS)	Yes: Claims	
	No: Claims	1-12
Industrial applicability (IA)	Yes: Claims	1-12
	No: Claims	

2. Citations and explanations

see separate sheet

1

The following documents are referred to in this communication:

D1 : WO 99/29047 A (QUALCOMM INC) 10 June 1999 (1999-06-10)

D2 : EP-A-0 928 072 (NOKIA MOBILE PHONES LTD) 7 July 1999 (1999-07-07)

2 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 1 is not new in the sense of Article 33(2) PCT.

2.1 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 1 is not new in the sense of Article 33(2) PCT. Document D1 discloses (the references in parentheses applying to this document):

A radio transmission power control circuit comprising:

a radio frequency down converter (1501) that produces a down converter output (page 11; lines 19-20) having a frequency equal to the frequency difference between a first down converter input based on a transmitted signal of a radio transmitter and a second down converter input based on a local oscillator signal;
a receiver baseband circuit (page 11; lines 20-26) that processes the down converter output to produce a power signal representative of the transmitted signal; and
a feedback control circuit (1515) that produces a transmitter gain control signal to control transmitted signal power so as to minimize the difference between the power signal and a power reference signal.

The subject-matter of claim 1 is therefore not new (Article 33(2) PCT).

It shall be mentioned that claim 1 is not considered to involve an inventive step over document D2 which with reference to figure 2 discloses a similar circuit. In D2 however the power measurement is performed at the intermediate frequency, which defines an equivalent method for controlling the power. If the down conversion would have been to baseband in the circuit according to D2, the calculation of the power signal would have been done in a receiver baseband circuit. Down conversion to baseband is well known by the persons skilled in the art.

- 2.2 A similar analyses as to independent claim 1 applies to independent claim 7 and therefore the subject matter of claim 7 does not meet the requirements of (Article 33(2) PCT).
- 3 The present application does not meet the criteria of Article 33(3) PCT, because the subject-matter of claim 2-6 does not involve an inventive step in the sense of Article 33(3) PCT.
- 3.1 Claim 2 solves the problem of how to use the gain control within a half-duplex system. D2 discloses a system for TDMA. A person skilled in the art knows that the TDMA is perfectly adapted to be used in a half-duplex system.
- 3.2 The use of digital circuitry to calculate a power signal according to claim 3 is disclosed in D2.
- 3.3 The technical feature of using a directional coupler to sense the transmitted signal according to claim 4 is disclosed in D2.
- 3.4 Claim 5 defines the use of the radio transmitter in a wireless local area network transceiver. It is considered to be obvious for the man skilled in the art, to use the disclosed transceiver in a wireless LAN.
- 3.5 Claim 6 defines the use of TDMA for the transceiver. The use of TDMA is disclosed in the prior art.
- 4 A similar analysis as to the claims 2-6 applies to the corresponding claims 8-12 which define equivalent to the circuits of claim 2-6 the corresponding methods of controlling the transmitter power.

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